CIVIL AIM CONSULTANTS & ENGINEERS

(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001-2015 Certified Company
NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/KN/W.No.13/2020-21 Date: 25.02.2021

TEST REPORT

CLIENT	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Sri. Kemparaju N,** Contractor, Bangalore.
NAME OF THE WORK	:	Improvements to Roads in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.
SAMPLE ID	:	Cement (Birla OPC 53 Grade)
DATE OF MANUFACTURE		January - 2021
DATE OF TESTING		23.02.2021 to 25.02.2021
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 269-2015
1	a) Initial Setting Time	IS-4031 (Part -5)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	330 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00 %	-

Assistant Executive Engineer Shettyhalli Sub-Division

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⇒ Any Query regarding the report must be reported within 30days from the date of testing.

For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No.01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah Layout, Nagasandra, Banglore - 560 073.
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Job No.: CACE/BBMP/KN/W.No.13/2020-21 Date : 25.02.2021

TEST REPORT ON FINE AGGREGATES (SAND)

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Sri. Kemparaju N,** Contractor, Bangalore.

Name of Work : Improvements to Roads in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 25.02.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : Sand Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	89	8.90	8.90	91.1	90-100
2.36	132	13.20	22.10	77.9	75-100
1.18	188	18.80	40.90	59.1	55-90
600 Micron	156	15.60	56.50	43.5	35-59
300 Micron	220	22.00	78.50	21.5	8-30
150 Micron	162	16.20	94.70	5.3	0-10

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Assistant Executive Engineer
Shettyhalli Sub -Division

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Job No.: CACE/BBMP/KN/W.No.13/2020-21

Date : 25.02.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Sri. Kemparaju N,** Contractor, Bangalore.

Name of Work : Improvements to Roads in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 25.02.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 20mm Aggregates

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
40	0	0	0	100	100
20	194	3.9	3.9	96.1	95-100
10	2433	48.7	52.5	47.5	25-55
4.75	1956	39.1	91.7	8.3	0-10

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Assistant Executive Engineer
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Date : 25.02.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Sri. Kemparaju N,** Contractor, Bangalore.

Name of Work : Improvements to Roads in Ward No.13.Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 25.02.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **15000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	184	1.23	1.23	98.77	95-100
20	8233	54.89	56.11	43.89	30-70
10	3256	21.71	77.82	22.18	10-35
4.75	2810	18.73	96.55	3.45	0-5

Assistant Executive Eng
Shettyhalli Sub -Divis

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Job No.: CACE/BBMP/KN/W.No.13/2020-21 Date: 30.06.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Sri. Kemparaju N,** Contractor, Bangalore.

Name of the work : Improvements to Roads in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Assistant Executive Engineer
Shettyhalli Sub -Division

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	02.04.2021	30.06.2021	8.199	712.2	31.65
2	02.04.2021	30.06.2021	8.184	728.9	32.40
3	02.04.2021	30.06.2021	8.165	736.5	32.73

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Job No.: CACE/BBMP/KN/W.No.13/2020-21 Date : 27.02.2021

TEST REPORT OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	: **Sri. Kemparaju N,** Contractor, Bangalore.
Name of Work	: Improvements to Roads in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.
Steel Dia/Length	: 8mm,10mm,12mm " Fe500 TMT Bars"
Reference to BIS codes	: IS 1786:2008(RA 2013) High Strength Deformed Steel Bars and Wires for Concrete Reinforcement-Specification
	: IS 1608:2005 Metallic Materials- Tensile Testing at Ambient Temperature
Date of test	: 27.02.2021

S.No	Brand	Nominal size (dia in mm)	Mass per meter (kg/meter)	TENSILE STRENGTH			
				0.20 % proof stress/ yield stress (N/mm^2)	Tensile strength (N/mm^2)	TS/YS ratio	Elongation, percent on gauge length
1	TMT	8	0.396	545	642	1.18	14
2	TMT	10	0.618	559	655	1.17	15
3	TMT	12	0.889	568	669	1.18	16.5

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Assistant Executive Engineer
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REQUIREMENTS AS PER IS: 1786 - 2008 Table 1, Cl 5.2

NOMINAL MASS AND TOLERANCES OF BARS

S.No	Nominal size (dia) (mm)	Mass per metre (kg/metre)	Tolerance in the Actual mass	
			Batch	Individual sample
1	4	0.099	± 7%	- 8%
2	5	0.154	± 7%	- 8%
3	6	0.222	± 7%	- 8%
4	8	0.395	± 7%	- 8%
5	10	0.617	± 7%	- 8%
6	12	0.888	± 5%	- 6%
7	16	1.58	± 5%	- 6%
8	20	2.47	± 3%	- 4%
9	25	3.85	± 3%	- 4%
10	32	6.31	± 3%	- 4%
11	36	7.99	± 3%	- 4%
12	40	9.86	± 3%	- 4%
13	45	12.49	± 3%	- 4%
14	50	15.42	± 3%	- 4%

REQUIREMENTS AS PER IS: 1786 - 2008 Table 3, Cl 8.1

MECHANICAL PROPERTIES OF HIGH STRENGTH DEFORMED BARS AND WIRES

High strength deformed bars -	0.20 % proof stress/ yield stress, Minimum (N/mm2)		TS/YS ratio, N/mm^2 TS:Tensile Strength YS:0.20 % proof stress/ yield stress	Elongation percent , Minimum, on gauge length
	Min	Max		
Fe 415	415		≥1.10, but TS not less than 485.0 N/mm^2	14.5
Fe 415D	415		≥1.12, but TS not less than 500.0 N/mm^2	18
Fe 415S	415	540	1.25	20
Fe 500	500		≥1.08, but TS not less than 545.0 N/mm^2	12
Fe 500D	500		≥1.10, but TS not less than 565.0 N/mm^2	16
Fe 500S	500	625	1.25	18
Fe 550	550		≥1.06, but TS not less than 585.0 N/mm^2	10
Fe 550 D	550		≥1.08, but TS not less than 600.0 N/mm^2	14.5
Fe 600	600		≥1.06, but TS not less than 660.0 N/mm^2	10

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Job No.: CACE/BBMP/KN/W.No.13/2020-21 Date : 25.02.2021

TEST REPORT ON FINE AGGREGATES (SAND)
IS 2116-1980

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Sri. Kemparaju N,** Contractor, Bangalore.

Name of Work : Improvements to Roads in Ward No.13 Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 25.02.2021

Material : Sand - Masonry Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 2116-1980
4.75	0	0.00	0.00	100.0	100
2.36	16	1.60	1.60	98.4	90-100
1.18	38	3.80	5.40	94.6	70-100
600 Micron	84	8.40	13.80	86.2	40-100
300 Micron	256	25.60	39.40	60.6	5-70
150 Micron	468	46.80	86.20	13.8	0-15

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